

1 4. The mobile station of claim 3, further comprising:
2 a PPP keep alive timer which begins counting from a time of any of a last
3 signal transmission and a last signal reception;

4 wherein upon timeout of said PPP keep alive timer, said control section
5 causes sending of said base station said priority request, and restarts said PPP keep alive
6 timer.

1 5. The mobile station as defined in claim 4, wherein,
2 if said radio channel is used preferentially, said control section sets a
3 counting period for said PPP keep alive timer to a value smaller than a channel holding
4 period, said channel holding period being a time measured from any of a last signal
5 transmission and a last signal reception, and until said base station cancels a radio channel
6 assignment to said mobile station.

1 6. The mobile station as defined in claim 5, further comprising:
2 a wireless channel state timer that counts said channel holding period; and
3 wherein
4 if said wireless channel state timer reaches said channel holding period,
5 said control section discontinues sending said priority request.

1 7. A mobile station for wireless communication with a base station,
2 said mobile station having a control section comprising:
3 a CPU,
4 a memory,
5 a bus, connecting said CPU, said memory to a transmission/reception
6 processor;

7 wherein when said mobile station requests assignment of a wireless
8 channel from said base station, said CPU causes transmission of a preferential channel
9 assignment request via said transmission/reception processor.

1 8. The mobile station of claim 7, wherein said preferential channel
2 assignment request further comprises an identification of a preferential channel usage
3 request packet.

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1 13. The base station controller of claim 12, wherein responsive to a
2 request for a priority wireless channel assignment by a priority requesting mobile station,
3 and wherein, if there are no free wireless channels, said control section releases a wireless
4 channel assignment from a non-priority requesting mobile station, and assigns said
5 wireless channel so released to said priority requesting mobile station.

1 15. The base station controller of claim 13, wherein when priority
2 requesting mobile stations, moves from a control area of a first base station to a control
3 area of a second base station, and requests a wireless channel assignment from said
4 second base station, and wherein, if there are no free wireless channels, a control section
5 of a base station controller that controls said second base station releases a wireless
6 channel assignment from a non-priority requesting mobile station, and assigns said
7 wireless channel so released to said priority requesting mobile station.

1 17. The base station controller of claim 16, further comprising:
2 a channel control table for registering said link layer connection control
3 table for each of said base stations; said channel control table comprising:

8 base station controller a reply to authorize priority processing, said reply enabling said
9 priority-requesting mobile station to use a wireless channel preferentially.

1 21. The packet data service node of claim 20, further comprising:
2 a mobile station information table for registering information about
3 priority channel usage authorization.

1 22. The packet data service node of claim 21, wherein:
2 said control section, upon receiving said priority request, refers to said
3 mobile station information table and sends a reply to permit priority processing to said
4 base station controller if said priority requesting mobile station has been registered for
5 priority channel usage, otherwise sends a reply to disallow priority processing to said base
6 station controller if said priority requesting mobile station has not been registered for
7 priority channel usage.

1 23. A mobile communication system comprising:
2 a base station controlled by a base station controller;
3 at least one of a plurality of mobile stations, in communication with said
4 base station using wireless communication channels, wherein
5 said base station controller releases a wireless communication channel
6 from said mobile station when no transmission nor reception between said mobile station
7 and said base station occurs for a time period exceeding a threshold period, and wherein:
8 a priority-requesting mobile station requesting a preferential use of a
9 wireless communication channel sends a priority request to said base station; and
10 said base station controller receives said priority request through said radio
11 base station, and upon reception of said priority request, said base station controller
12 transmits acknowledgement to said mobile station.

1 24. The mobile communication system of claim 23, wherein:
2 said mobile station transmits said priority request periodically.

1 25. The mobile communication system of claim 23, wherein:
2 said base station controller does not release said wireless channel when a
3 prior channel usage contract of said mobile station is registered to a packet data service
4 node to which said base station controller connected.

1 43. A computer program product for establishing a priority
2 communication channel, said computer program product comprising:
3 code that receives a priority request for use of a wireless channel;
4 code that determines that a priority usage of said wireless channel is
5 permissible;
6 code that sets a timeout value to a timer;
7 code that releases said priority usage of said wireless channel at expiration
8 of said timer unless at least one of: a periodic priority request is received, a transmission
9 is received and a transmission is made; and
10 wherein, responsive to at least one of: a periodic priority request is
11 received, a transmission is received and a transmission is made, said priority use of said
12 wireless channel is maintained; and
13 a computer readable storage medium for holding the codes.

1 44. A computer program product for establishing a priority
2 communication channel, said computer program product comprising:
3 code that receives a preferential channel assignment request from a base
4 station controller, and
5 code that transmits a reply to authorize said base station controller to
6 assign a wireless channel preferentially; and
7 a computer readable storage medium for holding the codes.

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